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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/706,914	11/06/2000	Lawrence Dwyer	10001216-1	8496

7590 06/23/2003

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EXAMINER	
NAHAR, QAMRUN	
ART UNIT	PAPER NUMBER
2124	

DATE MAILED: 06/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/706,914	Applicant(s) DWYER, LAWRENCE	
	Examiner Qamrun Nahar	Art Unit 2124	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 November 2000* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *06 November 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

1. Claims 1-20 have been examined.

Claim Objections

2. Claim 3 is objected to because of the following informalities: it depends on itself. Claim 3 is presumed to be dependent on claim 2. Appropriate correction is required.

3. Claim 16 is objected to because of the following informalities: "a error condition test" on line 3 of the claim should be "an error condition test". Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 11 recites the limitation "to provide error recover that is inserted in said computer program if error recovery is enabled" on lines 10-11 of the claim. It is unclear as to what is being inserted in the computer program. This limitation is interpreted as "to provide error recovery code that is inserted in said computer program if error recovery is enabled".

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1, 4, 6, 9, 11, 14, 16 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Agarwal (U.S. 5,966,541).

Per Claim 1:

The Agarwal patent discloses:

- a method of providing recovery from an error condition in a computer program ("The present invention works on program binaries and provides the ultimate end-to-end test. This approach, based on binary code rewriting, works by taking an original binary file and producing a new binary with certain useful properties, which result in test, protection, or repair functions. ... Another preferred embodiment performs assertion checking wherein a faulty or seemingly working binary is instrumented and potential errors are flagged. For example, the instrumentation can look for date-holding registers or memory locations in which the third and fourth digits are zeros and flag a potential error condition so that a user can look at the code and verify whether it is a real problem." in column 3, lines 11-16 and column 4, lines 57-63)

- parsing a source program for an error condition test; detecting if an error condition test exists in said source program ("A preferred embodiment further comprises generating a data flow representation of the binary code, choosing which values or variables to track, and using the data flow representation to track the chosen values or variables, and to further aid in determining where to install the software patches. ... The control and data flow representations can always be generated from binary code. However, control and data flow representations can also be generated from the source code when the source code is available. ... Referring back to FIG. 1B with the aid of the data flow graph, the next step 83 is to identify or "color" the instructions that potentially use dates or selected arguments. Starting with instructions identified as using dates (or specific arguments) or as being instructions that obtain a date through a program input, data analysis is used to mark or color all the instructions that can be contaminated with a date (or with the specific argument). FIG. 7 shows a colored graph 400 for the case where variable b is a date. In this graph, the hashed codes N2, N3, N4, N5, and N8 correspond to the instructions that may have to be changed." in column 3, lines 43-52 and column 9, lines 66-67 to column 10, lines 1-9)

- determining if error recovery is enabled when said error condition test is detected; creating an error recovery flag code when said error condition test exists and said error recovery is enabled; and inserting error recovery code in the computer program if error recovery is enabled ("Again referring to FIG. 1B, the actual rewritings 85, 87, 89 of the binary now takes place. First, the patches are installed 85. Each colored binary instruction is replaced by a set of binary instructions that implement the correct logic. For example, the instruction I3, c=a+b, is replaced in a manner similar to that described earlier. Next, branch and jump

instructions are modified if their targets have shifted. This is necessary because when a single instruction is replaced with multiple instructions, the length of that segment of code increases. Thus, the addresses of blocks that follow the lengthened block will all be shifted. Therefore, the branches, procedure calls and jumps that reach a given line of code, or target, through a given old address must also be changed to reflect the new shifted address." in column 10, lines 10-25, error recovery is inherently enabled).

Per Claim 4:

The Agarwal patent discloses:

- detecting if a call to a subroutine exists in said source program; and creating an error recovery flag test code to test if said error recovery is enabled and said subroutine exists (column 9, lines 6-14).

Per Claims 6 & 9:

These are system versions of the claimed method discussed above (claims 1 and 4, respectively), wherein all claim limitations also have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also anticipated by Agarwal.

Per Claims 11 (as best understood) & 14:

These are system versions of the claimed method discussed above (claims 1 and 4, respectively), wherein all claim limitations also have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also anticipated by Agarwal.

Per Claims 16 & 19:

These are computer readable medium versions of the claimed method discussed above (claims 1 and 4, respectively), wherein all claim limitations also have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also anticipated by Agarwal.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 2-3, 5, 7-8, 10, 12-13, 15, 17-18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Agarwal (U.S. 5,966,541) in view of Brunmeier (U.S. 5,511,164).

Per Claim 2:

The rejection of claim 1 is incorporated, and Agarwal further teaches generating code to perform said error condition test if said error condition test exists (column 10, lines 10-25).

Agarwal does not explicitly teach creating program abort code if said error condition test exists and error recovery is not enabled. Brunmeier teaches creating program abort code if said error condition test exists and error recovery is not enabled (column 30, lines 25-27).

It would have been obvious to one having ordinary skill in the computer art at the time of the invention was made to modify the method disclosed by Agarwal to include creating program abort code if said error condition test exists and error recovery is not enabled using the teaching of Brunmeier. The modification would be obvious because one of ordinary skill in the art would be motivated to exit a program if a fatal error is detected.

Per Claim 3:

The rejection of claim 2 is incorporated, Brunmeier further teaches generating code to conditionally skip said program abort code and said error recovery flag code when said error condition test exists and said error recovery is not enabled (column 30, lines 25-27).

Per Claim 5:

The rejection of claim 4 is incorporated, and further, Agarwal does not explicitly teach generating code to conditionally skip said program abort code and said error recovery flag test code when said error condition test exists and said error recovery is not enabled. Brunmeier teaches generating code to conditionally skip said program abort code and said error recovery flag test code when said error condition test exists and said error recovery is not enabled (column 30, lines 25-27).

It would have been obvious to one having ordinary skill in the computer art at the time of the invention was made to modify the method disclosed by Agarwal to include generating code to conditionally skip said program abort code and said error recovery flag test code when said error condition test exists and said error recovery is not enabled using the teaching of Brunmeier. The modification would be obvious because one of ordinary skill in the art would be motivated to reduce execution time of program.

Per Claims 7, 8 & 10:

These are system versions of the claimed method discussed above (claims 2, 3 and 5, respectively), wherein all claim limitations also have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also obvious.

Per Claims 12, 13 & 15:

These are system versions of the claimed method discussed above (claims 2, 3 and 5, respectively), wherein all claim limitations also have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also obvious.

Per Claims 17, 18 & 20:

These are computer readable medium versions of the claimed method discussed above (claims 2, 3 and 5, respectively), wherein all claim limitations also have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also obvious.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

11. Any inquiry concerning this communication from the examiner should be directed to Qamrun Nahar whose telephone number is (703) 305-7699. The examiner can normally be reached on Mondays through Thursdays from 9:00 AM to 6:30 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki, can be reached on (703) 305-9662. The fax phone number for the organization where this application or processing is assigned is (703) 746-7239.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

QN
June 15, 2003

KAKALI CHAKI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100